Apr 9th, 2:35 PM - 3:35 PM

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Poster Presentation P40

EVALUATION OF DOM UPTAKE BY SPIONID POLYCHAETE LARVAE FROM ANTARCTICA

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Thorson (1946, 1950) hypothesized that polar invertebrate species avoid a pelagic larval phase and instead favor direct development ("Thorson's Rule") and proposed an inverse relationship existed between latitude and the number of species with planktonic larval stages. Recent studies, however, suggest that a decrease in invertebrate larval abundance, not diversity, is correlated with an increase in latitude. The oceans surrounding Antarctica are nutrient rich, especially during late spring and early summer. Larvae of Antarctic spionid polychaetes feed using a dual-band system of cilia whose activities concentrate and then capture food particles. We evaluated the ability of spionid larvae from Antarctica to process seawater and absorb dissolved organic materials (DOM). Collected larvae were exposed to the iron-containing polysaccharide iron-dextran (1 mg / mL) for 12 to 24 hours at 0 °C. The presence of the iron (from iron-dextran) in larval tissue was detected using the "Prussian Blue" reaction. We found that the label was localized solely in the digestive system; there was no evidence of uptake by the epidermis. Control larvae, not exposed to iron-dextran, showed no label in tissue. Antarctic spionid larvae transport seawater through their digestive system and can potentially exploit DOM as an alternate source of food.